

Received on: 01/12/2015

Accepted on: 05/01/2016

Published on: 23/01/2016



QR Code for Mobile users

Conflict of Interest: None Declared !

Corresponding Author:

Dr. Hoang Thi Thanh Hang

Business Administration Faculty

Banking University of Hochiminh

City

36 Ton That Dam Street, District 1,

Ho Chi Minh City, Vietnam.

Email: hanghtt@buh.edu.vn

Capital Structure and Firm Performance of medium and small enterprises: Evidence from Vietnam

Doan Thanh Ha¹, Hoang Thi Thanh Hang², Nguyen Thi Ngoc Nga³

¹Department of Finance, Banking University of Hochiminh City, 36 Ton That Dam Street, District 1, Ho Chi Minh City, Vietnam

²Business Administration Faculty, Banking University of Hochiminh City, 36 Ton That Dam Street, District 1, Ho Chi Minh City, Vietnam

³Foreign languages Information Technology Center, Banking University of Hochiminh City, 39 Ham Nghi Street, District 1, Ho Chi Minh City, Vietnam

Abstract:

This study analyzes on impact of the capital structure to financial performance of small and medium enterprises (SMEs) in Vietnam. The study surveyed data table of 1,885 enterprises for the period of 2006 to 2014, with the combination OSL, REM, FEM. The study found that the leverage has a direct relationship with the financial performance of a company. However, short-term debt has a lower impact on financial performance than the long-term debt. In addition, in terms of macroeconomics, only inflation has a direct relationship with financial performance, while GDP growth has no relation with financial performance.

Keywords: Capital structure, financial performance, small and medium enterprises (SMEs).

INTRODUCTION

In recent years, with the integration of Vietnamese economy into the world economy, SMEs had significantly contributed to nation's GDP growth. SMEs have also contributed to national budget. However, there are still many problems to be solved. One of those is low financial performance of these enterprises. Financial performance is the main indicator to measure not only the effectiveness of asset utilizing but also the company's solution to enhance profit.

Capital structure decision is one of the key to financial performance of a company. Up to now, there have been many practical studies on this issue. However, the results of these studies are not the same. The objective of this study is to analyze the impact of capital structure on Vietnamese firm's financial performance, period from 2006-2014. Based on the result of this study, we will give recommendation to firm manager in order to design optimum capital structure to enhance firm's financial performance.

BASE THEORY

The conventional theory is that enterprises make loan to achieve profit which exceeds the interest cost. However, loan comes with un-welcomed friend- financial risk, and

the share-owners required higher EPS, which in-turn results to higher cost of capital. Therefore, the conventional idea is that there is an optimum capital structure, where a company is at its highest value. If we surpass this point, the Debt to Asset ratio would rise, and the firm value will decrease. However, this theory is not the base to find the maximum allowable loan to avoid bankruptcy.

Modern Capital Structure theory of Modigliani and Miller:

The modern capital structure theory was first mentioned by MM theory of Modigliani and Miller in 1958. In this theory, in a ideal market, and no corporate tax, the value of company is remained the same, when the there is a change in capital structure, or value of a company has no relationship with capital structure. However, when corporate tax is mandatory, debt-financing would enhance the value of corporate. The higher the leverage is, the higher value one company can achieve, and a company can achieve its highest value with 100% debt financing.

Trade-off theory:

The trade-off theory was first developed by Modigliani

and Miller in 1963. According to this theory, the financial manager must consider the trade-off between the benefit of tax shield and cost of financial distress to select a reasonable rate of debt-financing. The trade-off theory mentions that a good combination between Equity and Debt will lead to an optimum capital structure. This theory admits that the target debt ration can be different to company to company. Company with high intangible asset ratio (riskier), and high taxable income should be financed by more debt. Company with high tangible asset ratio, low taxable income should be finance mainly by equity. The trade-off theory can explain the difference among capital structure of company in many sectors (due to the different in asset type); but it can't explain the relationship between a high ROE and low leverage ratio (high profitability means that company can make more loan, and achieve higher benefit from the tax shield).

Pecking order theory:

Another theory on capital structure was developed by Myers and Majluf in 1984. This theory explains financing decision of enterprises based on asymmetrical information. Asymmetrical information refers to the fact that financial managers deeply understand the real value of their company than outside investors. Asymmetrical information is key to choose between inside or outside financing and issuing debt security or equity. The pecking order theory, based on asymmetrical information, has posed an order financing with the preference to inside financing (retained earnings to reinvest), than the debt-security issuance, and finally equity issuance. **Agency Cost Theory:**

The Capital Structure which is based on Agency Cost Theory is first mentioned in a study of Fama and Miller in 1972. Then, the agency cost theory was deeply developed in study of Jensen and Meckling in 1976 and study of Jensen in 1986. This theory accepts the existence of an optimum capital structure for company, with the present of agency cost. The Agency cost arose because of conflict of share-owners and debt holder - we can alternatively call it the agency cost of share-owners. Therefore, agency cost theory is reason why big company with high free cash flow tends to finance by loan in their capital structure. The explanation for this theory is that conditions in loan contract will restrict the behavior of manager which is not for the maximum value of company. Alternatively, the agency cost will increase in line with the growth of size of company, and decrease when the company is subject to control from creditors. When company makes much loan, it will be benefit from the tax shield and in addition to the control of owners, it

is subject to control from creditors. This pushes the company to be well, effectively managed, and save the agency cost. However, if company makes too much loan, it would lead to financial-distress risk. And when company faces the financial difficulties, or the share-owners will transfer the risk to creditor, or the creditor will not agree with share-owners on policies, solutions to help company weather through difficulties.

LITERATURE REVIEW

Ahmad and his Co. (2012) analyzed the impact of capital structure on firm's financial performance by studied the relationship between operation performance of Malaysian Firms, which mainly focused on Return on asset (ROA), Return on equity (ROE), Short-term debt STD, and long-term debt (LTD) and total debt (TD). Three variables mentioned in most of studies for impact on firm's financial performance are company size (SIZE), asset growth (AG), earning on total asset (EFF) which are used as controlling variables.

Khan (2012), employed the OLS regression model with a sample of 36 enterprises in Pakistan in the period of 2003-2009, listed on the Karachi Stock Exchange. The result showed that the leverage was measured by short-term debt to total asset (STD/TA) and total debt on total asset (TD/TA) have an adverse relationship with financial performance of enterprises which was measured by Return on Asset (ROA), and gross margin (GM) and Tobin's Q. The relationship between leverage and financial performance is measured by ROA is adverse and have no statistical meaning. Asset Size has no relationship with operation performance which is measure by ROA and GM but it has adverse relationship and statistical meaning with Tobin's Q.

San and Heng (2012) focused on 49 construction enterprises listed on Malaysian Bursa from 2005-2008 to find out the relationship between capital structure and financial performance of the company before and during the 2007 crisis. The result showed that there was relationship between capital structure and financial performance of company. With big enterprises, there is a direct relationship between ROA and debt to market value of equity; earning per share and LTD to equity ratio. For smaller enterprises there is an adverse relationship between earning per share and total asset ratio.

Salehi and Mahmoodi (2011) had employed data panel analysis model with a sample of 320 enterprises listed on Tehran Stock Exchange (Iran) in the period of 2002-2009 to study the impact of capital structure on profit of Iranian enterprises. The firm's financial performance was measured by ROA, ROE, EPS and Tobin's Q; and independent variables namely short-term debt ratio

(STD), Long-term debt ratio (LTD), Total debt ratio (TD). The result showed that EPS and Tobin's Q have a direct relationship with capital structure, but capital structure has an adverse relationship with ROA, and capital structure has no relationship with ROE.

Zeitun and Tian (2007), employed the cross-data panel of 167 enterprises in Jordan during the period of 1989 and 200. The result showed that the capital structure has an adverse relationship with financial performance in terms of market and accounting measurement. They found that the short-term debt to total asset ratio (STDTA), long-term debt to total asset ratio (LTDTA) and total debt to total asset ratio (TDTA) have an adverse relationship with financial performance which is measured by Tobin's Q (market indicator) and ROA(financial indicator).

Nguyen Thi Bae (2013) had analyzed 120 non-financial enterprises listed on HOSE and HNX, period from 2008-2012. This study focused on element impacting on firm's capital structure and considered the relationship between capital structure and firm's financial performance. With the leverage model, the author employed 4 dependent variables namely TDTA, TDTE, LTDTA, TDTC, and 4 independent variables namely profitability-PROF, growth rate -GROWTH, size of company- SIZE, asset structure -TANG. The result showed that there is no relationship between *PIE* and capital structure and the Vietnam Market was inefficient.

Tran Hung Son and Tran Viet Hoang studied the relationship between capital structure and financial performance with sample of 50 non-financial enterprises listed on HOSE. The study employed OLS model to analyze the relationship between capital structure and firms' financial performance which is measured by indicators namely ROA, ROE. The capital structure is measured by debt ratio namely Short-term debt to total asset ratio - STD, long-term debt to total asset ratio- LTD, Debt to equity ratio - *DIE*. The result showed that there is direct relationship between debt ratios and ROA, ROE. Besides, Growth and Size have no statistical meaning with capital structure.

DATA

The data is figures gathered from Financial Statement (FS) of Vietnamese SMCs in the period from 2006 to 2014. With a number of 2,358 enterprises supplied by General Statistics Office of Vietnam, with a going concern from 2006-2014, the author removed 653 enterprises whose FS did not comply with the standards set by Ministry of finance, the final sample include 1,885 enterprises. With the time ranging from 2006 to 2014, we have the sample of 16,965 observations. In this study, we employed STATA for data processing.

STYDY MODEL AND METHODOLOGY

Study Model:

Based on studied of Abor (2005), Abor (2007), Amjed (2007), Zeitun and Tian (2007), Khan (2012), Ahmad (2012) the author suggests the following regression model:

$$Y_{it} = \alpha_0 + \alpha_1LEVERAGE_{it} + \alpha_2TANG_{it} + \alpha_3SIZE_{it} + \alpha_4AGE_{it} + \alpha_5GDP_{it} + \alpha_6INFL_{it} + u_{it}$$

Where:

- Y_{it} : respectively the value of ROA, ROE. The formulas to calculate each of dependent variables is as the followings:

$$ROA = \text{Net income} / \text{Total Asset}$$

$$ROE = \text{Net income} / \text{Owner Equity.}$$

- LEVERAGE: The author employed 3 variables to measure leverage such as: DA: Total Debt/Total Asset; SDA: Short-term debt/Total asset; LDA: Long-term debt/Total asset.. Because variables -DA is auto-correlative with SDA and LDA, the author performed separate regression for DA, then performed regression with the combination of SDA and LDA.

- TANG: Fixed Asset/ Total Asset

- SIZE: Asset, we take natural logarithm of total asset.

- AGE: The age of company

- GDP: GDP Growth rate of Vietnam

- INF: Inflation Rate of Vietnam

- u_{it} : is the error term of model

Based on theory and practical test, table 1 show the expected sign (+/-) of slopes for variables

Table 1: Expected sign(+/-) of slope for variables

| TT | | ROA | ROE |
|----|------|-----|-----|
| 1 | DA | + | + |
| 2 | SDA | + | + |
| 3 | LDA | + | + |
| 4 | TANG | +/- | +/- |
| 5 | SZE | + | + |
| 6 | AGE | + | + |
| 7 | GDP | +/- | +/- |
| 8 | INFL | +/- | +/- |

Data Analyzing Methodology:

The sample is panel data. Therefore, the author employed 3 analysis methods includes: POOL Ordinary Least Squares Regression, Fixed effects model_ FEM, Random effects model _REM.

The OLS Pool Model is based on data gathered overtime, so, this model considers that all constant is unchanged overtime. In the other hand, FEM is based on hypothesis that the intercept (α_0) can be changed, but the slope ($\alpha_i, i = 1;2;3;4;5;6 \dots$) is unchanged. With REM, both the intercept and slope are changeable overtime. Therefore, we remove factors that alter the intercept from the model. To select appropriate methodology, the author

performed F-Test with the hypothesis:

- HO: all the slopes ν_i are zero (it means there are no different between slope of variables overtime).
 - Reject the HO with a pre-set significant level (significant level of 5%), we conclude that the FEM is appropriate
- Therefore, the hypothesis HO supposes that variance of raw estimate does not include difference, $\text{var}(\nu_i) = 0$ (or variance is unchanged overtime). If we reject HO, we conclude that there is variance of estimation, including group variance, it is suitable with REM. The suitability of REM and FEM estimation is tested by comparing to raw estimation.

Next, the author compares the REM and FEM. The author employed Hausman Test to choose appropriate estimate between fixed effect and random effect:

-. The Hypothesis HO supposes that there is no correlation between specification errors and correlation between. The REM estimation is reasonable in accordance to hypothesis HO, but it is not suitable to alternative hypothesis. FEM is suitable with HO and alternative hypothesis.

- If we reject HO, we conclude that Fixed Effect Model is more suitable than Random Effect Model.

If we don't have proof to reject HO, it would mean that we can't reject the correlation between variance and variable, we conclude that the fixed effect is not appropriate, and we prefer to random effect.

After we choose appropriate regression method, we will test the self-correlation, multi linear, changeable variance with the selected method. If we find that there is self-correlation we will fix by using GLS in STATA

STUDY RESULTS AND DISCUSSION

Descriptive Statistics Result:

Table 2: Descriptive the variable of models

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|----------|-------|----------|-----------|----------|----------|
| ROA | 16965 | 0.020996 | 0.38038 | -3.4043 | 47.61905 |
| ROE | 16953 | 0.038528 | 0.834935 | -54.7723 | 71.42857 |
| DA | 16965 | 0.691679 | 7.065219 | 0 | 805.6604 |
| SDA | 16965 | 0.626104 | 6.464243 | 0 | 805.6604 |
| LDA | 16965 | 0.065576 | 2.272227 | 0 | 292.0476 |
| TANG | 16965 | 0.186734 | 0.168172 | -0.00336 | 0.98864 |
| SIZE | 16965 | 8.51849 | 1.36418 | 1.09861 | 11.5101 |
| AGE | 16965 | 7.28102 | 4.73546 | 9 | 56 |
| GDP | 16965 | 0.06416 | 0.01231 | 0.0503 | 0.0848 |
| INF | 16965 | 0.11046 | 0.0518 | 0.0604 | 0.1989 |

(Source: The Author calculated from Excel and Stata 12.0)

From the result in table 2, we learned that the average ROA in the sample is - 2.09% and ROE is 3.85%. And we also learned that the SMCs in Ho Chi Minh City achieved low profit in comparison to the annual inflation in our country (with the average value is 11.04%). Besides, SDA

and LDA have average values of 62.6% and 6.65% respectively, we learned that Vietnamese SMCs in the period from 2006 to 2014 had tendency to make more STD than LTD to finance their operation.

Regression Result:

The F and Hausman Test showed that Pool PLS is best appropriate. Other tests showed no auto-correlation and multicollinearity, but there is change in variance. To fix this error, the author employ GLS model (General Least Squares) in Stata. The result is shown in table 3 and table 4. Where, Table 3 depicts regression result of two dependent variables (ROA, ROE) with the employment of independent variable, DA, to measure impact of debt on financial performance; table 4 shows the regression result of two dependent variables (ROA, ROE) with model which employed the independent variables namely SDA, LDA to measure impact of long-term debt and short-term debt on firm's financial performance.

Table 3: The result of ROA and ROE regression from DA

| | ROA | | ROE | |
|------|-------------|---------|-------------|---------|
| | Coef | T-value | Coef | T-value |
| DA | 0.021358*** | 55.93 | 0.032734*** | 36.76 |
| TANG | -0.00491** | 0.3 | -0.11722** | -3.07 |
| SIZE | -0.00124** | -0.57 | -0.008666** | 1.72 |
| AGE | 0.000803** | 1.14 | 0.001949** | 1.19 |
| GDP | 0.0339504* | 0.05 | 1.136451 | 0.74 |
| INF | 1.912185** | 1.38 | 2.088246** | 1.42 |

(Source: Data analyzed result from Stata 12.0)

Note: *, **, *** significant level of 10%, 5%, 1% respectively.

The result from table 3 showed that, the variable-DA has statistical meaning with significant level of 1% for both model. DA has direct relationship with ROA, ROE, we learned that heavy debt-financing would enhance firm's financial performance.

Table 4: Regression result by SDA and LDA

| | ROA | | ROE | |
|------|-------------|---------|-------------|--------|
| | Coef | T-value | Coef | T- |
| SDA | 0.000293*** | 1.94 | 0.001237*** | 1.58 |
| LDA | 0.15873*** | 369.74 | 0.238137*** | 106.81 |
| TANG | -0.04607*** | -7.84 | -0.19351*** | -6.33 |
| SIZE | -0.004935** | 6.33 | -0.017899** | 4.42 |
| AGE | 0.001229** | 4.85 | 0.002587 | 1.97 |
| GDP | 0.002562 | 0.5 | 0.013638 | 0.92 |
| INF | 1.876228** | 1.35 | 2.051557** | 1.39 |

(Source: Data-analyzed result from Stata 12.0)

Note: *, **, *** significant level of 10%, 5%, 1% respectively.

From the result in table 4, we learned that in both ROA and ROE model, short-term debt, and long-term debt positively correlates with financial performance. However, short-term debt has lower impact (0.029%) to financial performance, when other factors remain unchanged. Long-term debt has big impact (15.87%) to financial performance. This is because the short-term

debt requires higher funding cost, and the financial performance is low, and long-term debt requires lower, stable funding cost, then the financial performance will be higher. The AGE variable has statistical meaning with ROA model, but ROE model. In term of macro environment, the Inflation variable has direct relationship with financial performance, while the GROWTH variable has no statistical meaning.

POLICIES RECOMMENDATION

From the above analysis of data from 1.885 SMEs in Vietnam in the period from 2006-2014, with the employment of Pool OLS linear regression model, the result showed that high leverage in Vietnamese SMEs will enhance the financial performance. Simultaneously, the STD requires more cost and creates less financial performance. This is the real picture on financial management of SMEs in Vietnam. While each of financing model has its strength such as short-term debt requires low funding cost, long-term debt is stable. If SMCs can control and perform funding forecast with high accuracy as well as project a timely, clear funding plan to best utilize each funding model, the financial performance will be better and avoid utilizing long-term debt to finance the non-recurring short-term asset demand. These recommendations on financial management of SMCs in Vietnam are to improve the operating effectiveness of these enterprise

REFERENCES

1. Ahmad, Z., Abdullah, H and Rosian, S. 2012. Capital Structure Effect on firms performance: Focusing on Consumers and Industrials sectors on Malaysian Firms. *International Review of Business Research Journal*, 8(5):137-155.
2. Khan, I. (2012). Capital Structure, Equity Ownership and Firm Performance: Evidence from India. *Social Science Research Network*, Online Web.
3. Modigliani, F and Miller, H. 1958. The cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*.
4. Nguyen Thi Bac. 2013. *Capital structure and operation performance of listed enterprises in the Vietnam stock markets*. Unpublished doctoral dissertation, University of Economics, Vietnam.
5. Saeedi, A & Mahmoodi I. 2011. Capital Structure and Firm Performance: Evidence from Iranian Companies. *International Research Journal of Finance and Economics*, 70: 21-28.
6. San, O.T. & Heng, T.B. 2011. Capital Structure and Corporate Performance of Malaysian Construction Sector, *Humanities and Social Science Journal*, 1(2): 28-36.
7. Tran Hung Son & Tran Viet Hoang. 2008. Capital structure and operation performance of listed enterprises in the Ho Chi Minh stock market. *Development economics Journal*, 218.
8. Tran Ngoc Tho & ctg. 2007. *Modern Corporate finance*. Statistical Publishing House.

9. Zeitun, Rand Tian, G. 2007. Capital structure and corporate performance: evidence from Jordan *Australasian Accounting Business and Finance Journal*, 1: 40-53.

Cite this article as:

Doan Thanh Ha, Hoang Thi Thanh Hang, Nguyen Thi Ngoc Nga. Capital Structure and Firm Performance of medium and small enterprises: Evidence from Vietnam . *Asian Journal of Management Sciences*, 03(10), 2015, 1-5.
